this case, asserting that knowledge is a function of three variables – and the majority of responses to the Gettier counter-examples can be seen as attempting to find a fourth, 'hidden' variable), as are ontological reductions, such as the bundle theory of objects.

While any theory is theoretical only relative to some data, and thus some data are only data relative to some theory, we may reasonably think that there must be some data which are not theoretical relative to anything, on pain of regress.[3] These data are the ultimate subject matter for all theorizing and must include empirical data, such as observation and experience. But philosophical theorizing also draws upon other data, and that is what we have indicated with the term 'intuitions'. However, the nature of these data is highly t hat is w

unactualized possibilities are, even if those consequences need careful drawing out (see e.g. the discussion of the null individual in our 2005b). While that exhausts the data proper to the theory, it is a general feature of a theory of the nature of Xs that it may have consequences for which Xs exist, if any. Furthermore, that may be one of the primary interests in constructing such a theory. This might lead one to think that intuitions about which Xs exist, in this case the intuitions which are the data for the theory of the extent of possibility, are data for the theory of the nature of Xs. However, the methodological separatist denies this, insisting instead that the only data for the theory of the nature of possibility are intuitions about the nature of unactualized possibilities and that intuitions about what is possible do not directly constrain that theory. They do, however, indirectly constrain the theory via the requirement that all our theories be mutually consistent and, consequently, that the theory of the nature of possibility be consistent with the theory of the extent of possibility. If the former has a consequence which is inconsistent with the latter, one or other will have to be modified.

We have pursued the separatist methodology through a series of papers on metaphysical nihilism, which is the claim that there might have been nothing concrete. To begin, we (2005a) argued for this claim on the basis of a theoretical claim in the theory of the extent of possibility, namely, that all contingent concreta possess the modal property of subtractability,[7] which was itself grounded in intuitions about what is possible. Then, we (2005b, 2006) argued that, despite claims to the contrary, metaphysical nihilism is, in fact, consistent with, respectively, Lewis's (1986) and Armstrong's () theories of the nature of unactualized possibility. Finally, we (2008) argued that the plenitude objection to Lewis's (1986) theory of the nature of unactualized possibility misconstrues the role of the Principle of Recombination, which is, in fact, part of the theory of the extent of possibility and not a proper part of Lewis's theory of the nature of unactualized possibility.

possibly, other sentences in the Opinion. Thus, in the case of the analysis of modality, we get the following (4):

(Opinion)	It is possible that there be [Fs, e.g.] talking donkeys
(Analytic Hypothesis)	It is an F-possibility iff there unrestrictedly exists an F*
(Metaphysical Base)	There (unrestrictedly) exist x, y .... such that .... H*x,y ...

where H* is a primitive expression of the kind that figures at the end of a chain of Definitions of the arbitrary non-modal predicate F*.

Such an analysis is evaluated against the dual virtues of Conservativeness (of Opinion) and Economy (of Metaphysical Base) in the following manner (10): we hold the Analytic Hypotheses constant and consider the various pairings of Opinion and Metaphysical Base which result from their co-variation established in the Analytic Hypotheses. If some such pairing is adequate with respect to both Conservativeness and Economy, then the analysis is accepted, but if none is, the analysis is rejected.

Since Opinion includes beliefs about what is and is not possible, beliefs which have a direct bearing on the extent of possibility, considerations of Economy in the Metaphysical Base have direct consequences for the extent of possibility. Thus, to take a well-known example, Opinion includes, or at least is committed to, the possibility of 'island universes', that is, possible universes with spatio-temporally unconnected parts. But the Analytic Hypothesis requires that all possibilities are parts of worlds and the Metaphysical Base tells us that worlds are maximally spatio-temporally interconnected mereological sums. Thus, Lewis (1986, 71) is faced with the choice of modifying the Metaphysical Base or rejecting an aspect of Opinion, and he takes the latter course. This seems a clear violation of methodological separatism, justified by the conception of analysis.

Divers' challenge to the separatist is to give an equally well-defined and clear conception o

theory choice to make, comparing not merely the virtues of each theory but also those of the next best theory. Suppose, instead, that Modal Theory does not capture the intuition. Then, in our overall account of modality, there is a loss of Conservativeness. But, crucially, this is held against Modal theory, the theory of what is possible, not the Lewisian theory of what possibilities are. So, should there be some inconsistency discovered with some third theory, we can properly evaluate which part of our overall account of modality has that particular weakness.[10]

However, this is not an adequate separatist response to Divers' challenge, for there is as yet no well-defined conception of the components, structure, aims, methods and criteria of success for a separate theory of the extent of possibility. Without such a conception, it remains open that the only adequate way to address the question of extent is by an analysis of the nature of possibility and its consequences for the extent of possibility.

From what was said above, an account of the extent of possibility, of what is possible, appears to have two parts corresponding, respectively, to data and to theory, namely <Intuition, Principles>. The intuitions will be those about propositions of the form '<>p'. The principles will be conditionals of the form 'if p then <>q' and perhaps also 'if p then ~<>q'. In order to count as a theory of the intuitive data, the principles must non-trivially entail that data (i.e. not because they have the form 'if <>p then <>q'). Furthermore, the theory is interesting or useful or explanatory in virtue of having principles which each generate significant numbers of data points.

However, in order for the principles to generate any possibilities at all, we need a third element in the theory, corresponding structurally to the Metaphysical Base. Now, if there are a small number of principles with a limited variety of antecedents, then this third element can be quite small, but we cannot know that in advance. So, it is best if the third element contains all the antecedents of all the possible Principles. Since we are only interested in true antecedents, let's call this 'Fact'. Fact includes all of Intuition and all consequences of the conjunction of Fact and Principle, for the antecedents of Principles can be modal. So we have the following structure: <Intuition, Principles, Fact>. Which we can spell out schematically:

Intuitions: $<>p_1, <>p_2, …, <>p_n$
Principles: if p^*_i then $<>p_j$
Facts: $p^*_1, p^*_2, …, p^*_m$

The Principles are not analytic, for their consequents contain information not in their antecedents. Rather, they are meant to explain the Intuitions (in conjunction with the Facts). So how do we evaluate such a theory? There seem to be four criteria

2. Fit to data

If we have two theories which are both consistent, we can evaluate their relative merits by considering which has a better fit to the data, that is, which captures more of the Intuitions. However, if the Principles only generate possibilities, that is, propositions of the form '<>p' (see below for discussion of this issue), we need to take care to distinguish between a theory which fails to fit the Intuition that ~<>p by generating <>p, and one which fails to fit the Intuition that <>p by failing to generate <>p. In the former case, this is clearly a theoretical vice, but the latter case may not be such unless we know independently that the theory is complete. If we allow the possibility of multiple Principles, we may be able to rectify the latter failure to fit the data by adding more Principles. As we see in the next section, many philosophers seem to assume that there can only be one Principle generating possibilities.

3. Simplicity

If we have two theories which are both consistent, we can evaluate their merits by how well they organize the data. Simplicity is very hard to make precise, but it is a

where a single-criterion modal theory fills in the ellipsis in (P) with just one clause, while a multiple-criterion modal theory fills in the ellipsis with a disjunction of clauses. That is, the single-criterion theory has one Principle of the form ' if p then <>q' whereas the multiple-criterion theory has several such Principles. According to a single-criterion modal theory, there is only one way for a proposition to be determined possible; according to a multiple-criterion modal theory, there are multiple ways for a proposition to be determined possible. That modal theory is, or should be, single-criterion is typically assumed in arguments of the form: state of affairs S does not meet criterion C, so p, the proposition describing S, is not possible. For this argument to be valid, it must be that criterion C gives the only criterion for a proposition describing a state of affairs to be possible. Thus, the argument relies on modal theory being single-criterion. But this assumption has not been articulated, let alone defended. In what follows, we draw attention to this unarticulated and undefended assumption and the role it plays in two recent arguments against the possibility of nothing.[11]

One of the most prominent single-criterion modal theories is

(Con) <p> is possible iff it is conceivable that p.

Such a theory is described by Tamar Szabó Gendler and John Hawthorne thus:

> We have, it seems, a capacity that enables us to represent scenarios to ourselves using words or concepts or sensory images, scenarios that purport to involve actual or non-actual things in actual or non-actual configurations. There is a natural way of using the term 'conceive' that refers to this activity in its broadest sense. When we engage in such conceivings, the things we depict to ourselves frequently present themselves *as possible*, and we have an associated tendency to judge that they

But say you, surely there is nothing easier than to imagine trees, for instance, in a park, or books existing in a closet, and no body by to perceive them. I answer, you may so, there is no difficua cl t-0.2 ( ) of-0.2 ( ) g: TJ ET Q 0.06oygf y( ) 0.2 (

We might insist that it is not possible that there should be, or have been, nothing at all; whether animate or inanimate, material or immaterial, there had to be something. On the other hand, it may well be that of no particular thing can one say that it is inconceivable that it should not have existed; our galaxy did not have to exist, nor did galaxies quite generally. (2004, 110)

In this passage, Rundle seems to take impossibility to be interchangeable with inconceivability, and, as a consequence, thereby endorse, at least implicitly the single-criterion modal theory (Con). This comes out more clearly in the following argument against the possibility of nothing, where, on the assumption that we are unable to imagine nothing, it follows that there had to have been something, at least a setting:

. . . I suspect that our attempts at conceiving of total non-existence are irredeemably partial. We are always left with something, if only a setting from which we envisage everything having departed, a void which we confront and find empty, but something which it makes sense to speak of as having once been home to bodies, radiation, or whatever . . . [T]alk of imagining there was nothing—which is what is called for—does run the risk of being treated as if a matter of imagining nothing, and that is refraining from imagining anything

compared to the single-criterion approach. Another response would be to deny that Modal Theory must in fact capture a set of intuitions about necessity as well as about possibility. We explore this response by considering cases. The best candidates for

Kripke's discussion, and all that follow it, always introduce a name for the original table. So let us call the table actually made from the wood of the oak that fell during the Great Storm of '87 'Tabby' and make clear that this is a genuine singular term and not an abbreviated description. Now, consider the possible world in which no table is made from that tree but a very similar table is made from another tree. Is that table Tabby? One way of addressing that question is to ask about the name, that is, does the name 'Tabby', as we use it, refer to that table in that possible world? (Of course, the people in that world may have their own name for the table and that may also be 'Tabby', but it is our name we are asking about.)

This question about naming could surely only receive an intuitive answer if semantic competence with the name involved grasping some principles of the form: [] (x) (Fx -> 'T' refers to x). Now Kripke of all people is not going to appeal to semantic intuitions about naming of that form. It seems instead that what is driving Kripke's intuition is that there are constraints upon which possible objects a given actual name can refer to, that these constraints are not part of the intension or connotation or sense of the name, but rather they must derive from some contingent causal connection between the name and the object. Thus, since our name 'Tabby' only refers to a particular table in virtue of that table's causal relations, for it to refer to a possible table, that possible table must have the right position in the causal order to be the referent of our name. It could then be argued (not easily, but one can see how the argument might proceed by ruling out alternatives) that only having the same origin as Tabby is sufficient to make it the case that the name 'Tabby' refers to that object.[15] If this is what underlies Kripke's conviction that a table with a different origin would not be '*this table*' (1980, 113; emphasis in the original), that is, would not be Tabby, then we can see that far from the necessity of origin being a modal datum, the modal intuition that Tabby could have been made from a different tree is over-ruled by the

one introducing necessities, it is most likely to be a version of the Rule of Necessitation: if p is known *a priori*[17] then []p. This would explain the necessity of self-identity (we know the self-identity of each thing *a priori*) and analytic or conceptual truths such as 'All vixens are foxes' and 'Nothing is red and green all over at the same time'. And of course, within a multiple-criterion Modal Theory, accepting this Principle does not rule out a posteriori necessities.

The objection was that we always have a reason to prefer a single-criterion Modal Theory because it directly entails intuitions of necessity whereas a multiple-criterion theory will have to capture those intuitions by adding *ad hoc* Principles. But we have seen that the alleged intuitions of necessity are either no such thing or can be captured by the single Principle 'if it p is known *a priori*, then []p'.

So we have seen that single-criterion theories will always have trouble providing an adequate fit to the data and that there is no such problem with multiple-criterion theories. Of course, there is always a trade between simplicity and fit, but we are left with no reason to think that only a single-criterion theory can find the appropriate balance. Thus the widespread, unargued assumption that an adequate Modal Theory will be single-criterion is unjustified.

Burdens of proof and

(LP)   One has the right to assume <>p until someone proves the contrary.

is also a good regulative principle in philosophy, since proving impossibility requires
proving one has not over0.06 0 0 0.06 72 731.16cm22004355T 200 0 0 200 0 0Tm /TT3.0 1 T

References